

EGGPLANT

Solanum melongena L.

Plant symbol =SOME

Contributed by: USDA NRCS National Plant Data Center



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Alternate Names

Aubergine

Caution: Eggplant leaves are toxic and should only be used externally.

Uses

Food: Eggplant fruit is said to be very nutritious and is a good source of vitamin C and potassium. It is usually cut into strips or cubes and fried, baked, stewed, sautéed, or added to soups, curries, etc.

Ethnobotanic: The fruit is used as an antidote to poisonous mushrooms. It can be pounded with vinegar to create a poultice for cracked nipples, abscesses, and hemorrhoids.

The leaves are narcotic. A decoction made from the leaves can be applied to discharging sores and internal hemorrhages. A soothing poultice for the treatment of burns, abscesses, cold sores, and similar conditions can also be made from the leaves.

The ashes of the peduncle are used in the treatment of intestinal hemorrhages, piles, and toothache. A decoction of the root is used as an astringent.

Medicinal: The fruit is hypotensive and helps to lower blood cholesterol levels and is suitable as part of a diet to help regulate high blood pressure.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Eggplant is an annual in temperate zones and perennial in the tropics. This plant is a warm-season frost-tender perennial that can be grown as an annual. Eggplants usually grow 2-4 feet tall with many branches and large, rangy leaves. The leaves are alternate and lobed, with the underside of most cultivars covered with dense wool-like hairs. The flowers are violet-colored, star-shaped, and bloom either as a solitary or in clusters of two or more. These characteristics give the plant an ornamental look.

Fruit: The fruit can vary in shape from oval to round and long to oblong. Most growers and consumers are accustomed to mature shiny purplish black, oval or pear shaped fruit. However, mature fruit can also be red, yellowish-white, or green. Purplish black eggplants can be bitter with thick tough skins and fibrous flesh or mild-sweet with thin tender skin and non-fibrous flesh. The white skin eggplant is firmer, drier, and milder tasting, but has a very thick skin that must be peeled prior to eating.

Distribution: For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Establishment

Eggplant is most commonly established through transplants. Small producers and gardeners find it more convenient to buy transplants rather than grow their own due to insufficient space, inadequate growing conditions, lack of time, or because the need for only a few plants. On the other hand, some varieties are not locally available as transplants, so one has no choice but to grow their own.

Purchasing Transplants: When purchasing transplants, select those that are sturdy, dark green in color, and not yet in bloom. Leaves should be fully expanded and free of diseases and insects. Transplants grown in individual containers may cost more, but are usually worth the added expense,

because their roots are less disturbed when they are transplanted in the field.

Growing Transplants: Eggplant grown from seed on small farms should be seeded 4 to 6 weeks before the plants are to be set out. Seeds germinate in 5 days at 86 degrees F, but may require up to 13 days at 68 degrees F. Commercial mixtures for starting seeds are available. Seeds are to be placed 2 seeds per inch in rows 4-6 inches apart, at a depth of 1/2 inch. Plant seeds in a moist medium at a temperature of 75° to 85 °F. Be sure the soil does not dry out during the germination period. Once the seeds germinate, keep the soil moist to the touch. Over watering will cause damping-off.

Transplant young seedlings into growing containers when the stems have straightened and the first true leaves have opened. This is usually 15 to 20 days after the seed was sown, but may be longer at lower temperatures. The young plants should be exposed to full sunlight if possible. The best temperatures for growing transplants are from 65° to 75°F during the day and 60° to 70°F at night. A hot bed or cold frame works well for growing the young plants.

Transplants require 6 to 8 weeks growth at daytime temperatures of 70 to 80 degrees F and night time temperatures of 65 to 70 degrees F to be ready for the field.

Preparing Transplants for the Field: Eggplants require more care than other types of plants when transplanting to the field. Hardening off the plants enables them to withstand planting shock. Start the hardening off process 10 days to 2 weeks before planting them in the garden. Begin by moving the plants in their containers outdoors to a shady spot (a cold frame works well for this purpose). Move the plants into sunlight for short periods each day, increasing the length of exposure gradually. Reduce the watering frequency to slow growth, but do not allow the plants to wilt. Do not put tender seedlings outdoors on windy days. Once the plants are hardened off and danger of frost passes, plant in the field.

Site preparation: Till soil to a depth of 6-10 inches to allow for root development. In areas that have compacted soil till or subsoil to a depth of 18 to 24 inches to destroy the hard pan. Growers with a small plot can prepare soil by tilling or spading. Soil preparation should be preformed in the fall after the harvest season or in the spring before planting. Soil should not be worked while it is wet.

Planting: Eggplant is a warm season crop and very susceptible to frost. It can be injured by periods of cold temperature above freezing, and is more sensitive to low temperatures than tomatoes and peppers.

Plant eggplants in full sun. Those growing in partial shade will produce less than optimum yields and fruit will take longer to ripen. The site should have fertile, well drained soil. If possible, avoid planting where eggplant, tomatoes, potatoes, or peppers were planted the previous year. All of these can be susceptible to and harbor similar disease problems.

Careful watering is necessary at the time of planting because transplants are very sensitive to water stress. Plants are typically established in 30-to-36-inch rows with 18 to 24 inches between plants.

Eggplant transplants are very responsive to the use of black plastic mulch and drip irrigation. This process provides warmer soil temperatures in the spring, protection from weeds, and consistent water availability. This plastic mulch, along with irrigation, allows producers to grow double rows of eggplant within the same row.

Management

Fertilizer: Eggplant is a heavy feeder and therefore may need extra fertilizer. A soil test may be necessary to determine the fertility of your soil. If no soil test, apply 2 to 3 lbs of a complete fertilizer (i.e. 10-10-10, 6-12-12, or 9-16-16) per 100 feet of row. This should be completed in two separate applications by incorporating one half of the fertilizer at the time of planting and the remaining fertilizer after the first fruit appears. Some soils may require a ¼ cup of starter fertilizer (high in phosphorus) solution to be poured around each newly transplanted seedling to stimulate growth. A side dressing of ¼ cup of fertilizer incorporated in a 2-foot circle around the base of the plant immediately after flowering will be beneficial in soils low in nitrogen. However, be careful not to over-fertilize.

Watering: Eggplants need to be in moist soil at all times. One inch of water each week is a minimum. This may vary, however, due to air temperature, wind, soil type, rainfall, and whether or not mulch is used.

Sandy soils require more frequent watering. Heavy soakings at weekly intervals are better than many light soakings as light, frequent watering promotes shallow root systems. Mulching will reduce water loss from the soil.

Mulches help keep weeds down, reduce water loss, and stabilize soil temperatures. Inorganic mulches, such as polyethylene and aluminum, are available in many farm and garden stores. Organic mulches, such as straw, leaves, or grass clippings, can also be used. Organic mulches should be at least 2 inches, and preferably 3 to 4 inches, deep. Mulching too early in the season with organic mulches will keep the soil cool, resulting in slow growth, poor fruit set, and shallow rooting. Fertilizer and drip irrigation must be applied before applying the mulch, unless fertigation is practiced.

Weed Control: Weeds compete with eggplant for sunlight, nutrients and water. In small planting weeds are best controlled with cultivation or mulches; however in large plantings, herbicides can be used.

Harvesting: Eggplant fruits are harvested from the time they are one-third grown to full size. However, remove the fruit before the flesh becomes soft and the seeds begin to harden. Over-mature fruits become spongy, the seeds harden and darken, and the fruit surface becomes dull. Fruits can be snapped from the plant, but less damage usually occurs if they are clipped with a sharp knife or scissors. The short stem attaching the fruit to the stalk is often covered with sharp spines, so gloves may be necessary. The harvested fruits are delicate; handle carefully.

Staking may be necessary later in the season as the number and size of the fruit increase. Rain, wind and irrigation can cause the branches to break or droop. Fruit touching the ground may spoil.

Pests and Potential Problems

Eggplants are subject to a number of problems, including diseases, insects, and those brought on by weather and other environmental factors.

Diseases of eggplant include seed rot, damping-off, anthracnose, late blight, alternaria leaf spot and verticillium wilt. Seed treatment and proper growing conditions can reduce seed rot and damping-off. Verticillium wilt is best controlled by long term rotations with non-related crops that are not susceptible to wilt, and by planting in well-drained soil.

Insects can also cause damage to eggplant. Cutworms may feed on new leaves or cut stems on small plants. Spider mites can be a problem during hot weather. Flea beetles, which chew small holes in the leaves of eggplant, can be severe in some years.

The Colorado potato beetle can also cause severe damage if left uncontrolled.

Cultivars, Improved and Selected Materials (and area of origin)

'Nitta/Molokai' hybrid is a popular eggplant (*Solanum melongena*) that is grown on Guam. The Department of Horticulture of University of Hawaii released the cultivar in 1995. The hybrid produces high quality fruits with long fruit length, deep maroon color, and longer shelf life.

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Prepared By:

Lincoln Moore

USDA NRCS National Plant Data Center
Baton Rouge, Louisiana

Species Coordinator:

Lincoln Moore

USDA NRCS National Plant Data Center
Baton Rouge, Louisiana

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